

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference GB2003069PCT | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/FR2004/050359 | International filing date (<i>day/month/year</i>) 27.07.2004 | Priority date (<i>day/month/year</i>) 13.08.2003 |
| International Patent Classification (IPC) or national classification and IPC C03C17/34, C03C17/36 | | |
| Applicant SAINT-GOBAIN GLASS FRANCE | | |

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|---|--------------|---|-----------|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|-------------------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>4. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | | <input checked="" type="checkbox"/> | Box No. I | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input checked="" type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. II | Priority | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. IV | Lack of unity of invention | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VI | Certain documents cited | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application | | | | | | | | | | | | | | | | | | | | | | | |

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| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

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International application No.

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| Box No. I | Basis of the report |
|-----------|---|
| 1. | <p>With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rule 12.3 and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4)</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2 and/or 55.3)</p> <p>2. With regard to the elements of the international application, this report is based on <i>(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)</i>:</p> <p><input type="checkbox"/> the international application as originally filed/furnished</p> <p><input checked="" type="checkbox"/> the description:</p> <p>pages <u>1-24</u> _____ as originally filed/furnished</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the claims:</p> <p>nos. <u>1-33</u> _____ as originally filed/furnished</p> <p>nos.* _____ as amended (together with any statement) under Article 19</p> <p>nos.* _____ received by this Authority on _____</p> <p>nos.* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the drawings:</p> <p>sheets <u>1/1</u> _____ as originally filed/furnished</p> <p>sheets* _____ received by this Authority on _____</p> <p>sheets* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.</p> <p>3. <input type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p> <p>4. <input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p> <p>* <i>If item 4 applies, some or all of those sheets may be marked "superseded."</i></p> |

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Box No. IV

Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☒ paid additional fees under protest.
 - ☐ neither restricted the claims nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
 - ☒ not complied with for the following reasons:
- The different groups of inventions are as follows:
- Invention 1: claims 1-32 :
- Transparent substrate comprising a stacking of thin layers, such that at least one of the layers comprises an Si and Zr nitride.
- Invention 2: claim 33
- Magnetron sputtering target for obtaining an SixZryAlz layer.
- These inventions are not so linked as to form a single general inventive concept (PCT Rule 13.1) for the following reasons:
- The present application does not meet the criterion of unity of invention as defined in PCT Article 3(4)(iii) and Rule 13, since independent claims 1, 12 and 31 do not contain the following feature of independent claim 33: a magnetron sputtering target. There is no technical relationship among the two groups of inventions involving one or more of the same or corresponding special technical features. Consequently, the two groups of inventions are not linked by a single general inventive concept.
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos. _____

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| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | |
|--|---|--|-----|
| 1. Statement | | | |
| Novelty (N) | Claims | <u>2-6, 11-27, 29</u> | YES |
| | Claims | <u>1, 7-10, 28, 30-33</u> | NO |
| Inventive step (IS) | Claims | <u>6, 11, 14, 15, 18, 19, 29</u> | YES |
| | Claims | <u>1-5, 7-10, 12, 13, 16, 17, 20-28, 30-33</u> | NO |
| Industrial applicability (IA) | Claims | <u>1-33</u> | YES |
| | Claims | <u></u> | NO |
| 2. Citations and explanations (Rule 70.7) | | | |
| 1. Reference is made to the following documents: | | | |
| D1 : EP 0 546 302 A | | | |
| D2 : EP 0 622 645 A | | | |
| D3: US 5 354 446 | | | |
| 2 INDEPENDENT CLAIM 1 | | | |
| 2.1 The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 does not comply with the criterion of novelty as defined by PCT Article 33(2) : | | | |
| <p>Document D1 describes a glass substrate coated with a plurality of thin dielectric layers with alternately strong and weak refractive indices, including a layer containing a mixed silicon and zirconium nitride (cf. example 1, page 4). The refractive index of the SiZrN layer is not mentioned in D1; however, even though said index may vary (for instance according to the Si/Zr atomic percent), it is likely to fall within the same range as that described in claim 1, i.e.</p> | | | |

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| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
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between 2.10 and 2.30.

3. INDEPENDENT CLAIM 12

- 3.1 The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 does not comply with the criterion of inventive step as defined by PCT Article 33(3):

Document D2 describes a glass substrate coated with a stacking of layers having infrared reflective properties (cf. page 2, lines 1-2), including a layer composed of silicon and zirconium nitride (cf. page 3, lines 24-32). The same reasoning as that made in point 2.1 above applies, *mutatis mutandis*, with regard to the refractive index.

Claim 12 differs from D2 in that the Si/Zr atomic percent is between 4.6 and 5.

No technical effect appears to be derived from said difference.

The problem to be solved can therefore only be that of obtaining a number of SiZrN layers.

Trying different Si/Zr atomic ratios in order to optimise the effect obtained forms part of routine practice for a person skilled in the art.

Consequently, claim 12 does not involve an

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inventive step.

4. INDEPENDENT CLAIM 31

- 4.1 Said claim does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 does not comply with the criterion of inventive step as defined by PCT Article 33(3).

5. INDEPENDENT CLAIM 33

- 5.1 Document D3 describes a planar magnetron sputtering target including Si and Zr (cf. table 2, examples 15-18). D3 specifies that Al can be added to the target (cf. column 6, lines 12-14).

On the basis of the method used, there is always a difference (within the range given in claim 33) between the Si/Zr ratio of the target and that of the layer.

Therefore, D3 describes targets for obtaining one or more layers including SixZrYAlz as described in claim 33.

Said claim does not meet the requirements of PCT Article 33(1), because the subject matter of claim 1 does not comply with the criterion of novelty defined by PCT Article 33(2).

6. DEPENDENT CLAIMS 2-5, 7-10, 13, 16, 17, 20-28, 30, 32

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

The claims do not contain any features which, when combined with the features of any of the claims to which they refer, meet the PCT requirements of novelty and inventive step (PCT Article 33(2) and (3)).

7. DEPENDENT CLAIMS 6, 11, 14, 15, 18, 19, 29

The combination of features of claims 6, 11, 14, 15, 18, 19 and 29 does not appear to be contained in the prior art or to be derived in an obvious manner therefrom.